

1. A method for coating a printed circuit board comprising an insulating layer and a conducting layer, with metal pads and/or through-holes in which the pads and/or through-holes are provided with an anti-tarnish coating, the method comprising contacting the pads and/or through-holes with a bright-etch composition in a bright-etch step; and subsequently metal plating the etched pads and/or through-holes by contact with a plating composition comprising ions of a metal which is more electropositive than the metal from which the pads and/or through-holes are formed and being substantially free of reducing agent for said ions in an immersion metal plating step to form solderable plated metal surfaces.

2. A method according to claim 1 in which the plated metal surfaces are contacted with a solution of a tarnish inhibitor.

3. A method for coating a printed circuit board comprising an insulating layer and a conducting layer, with metal pads and/or through-holes in which the pads and/or through-holes are provided with an anti-tarnish coating, the method comprising metal plating the etched pads and/or through-holes by contact with a plating composition in a metal plating step to form solderable plated metal surfaces and contacting the plated metal surfaces with a solution of tarnish inhibitor.

4. A method according to claim 1 in which the metal plating step is a method in which a metal which is more electropositive than the metal of the said pads and/or through-holes is immersion/displacement coated from an aqueous solution containing ions of the more electropositive metal substantially free of reducing agent for said ions.

5. A method according to claim 1 in which the plating composition contains a complexing agent for the said ions, preferably a multidentate ligand complexing agent.

6. A method according to claim 1 or claim 3 in which the plating composition comprises a tarnish inhibitor and in the process, the metal surfaces are contacted with a solution comprising a tarnish inhibitor during the plating step, so that the tarnish inhibitor is present in the metal plating composition.

7. A method according to claim 1 or claim 3 in which the metal plated surfaces are formed in the plating step and subsequently the pre-formed plated metal surfaces are contacted with a solution comprising a tarnish inhibitor in a postrinse second step.

8. A method according to claim 2 or claim 3 in which the contact time of the plated metal surfaces with the solution comprising a tarnish inhibitor is from 10 seconds to 5 minutes.

9. A method according to claim 2 or claim 3 in which the metal surfaces are contacted with a solution comprising a tarnish inhibitor by dip coating or spray coating.

10. A method according to claim 2 or claim 3 in which the tarnish inhibitor is present in the solution in an amount of from 0.001 to 5% by weight of the solution.

11. A method according to claim 1 in which the metal coating of the plated metal surfaces comprise nickel, silver, tin, lead, palladium, cobalt, gold, platinum or bismuth or their alloys, preferably silver.

12. A method according to claim 1 in which the pads or through-holes are formed of copper.

13. A method according to claim 1 including a preliminary step of applying to exposed conductor traces at the surface of the PCB a mask which is an insulator, such that the pads and/or through-holes are left exposed.

14. A method according to claim 1 including a subsequent step of attaching conducting components to the metal plated pads and/or through-holes using solder in direct contact with the metal plating.

15. An aqueous plating composition suitable for forming an immersion plating of a relatively more aelectropositive metal on a relatively less electropositive metal substrate containing ions of the more electropositive metal and a complexing agent for the ions and a tarnish inhibitor for the more electropositive metal and being substantially free of reducing agent for said ions.

16. A composition according to claim 15 in which the tarnish inhibitor is present in the solution in an amount of from 0.001 to 5% by weight of the composition.

17. A composition according to claim 15 in which the said ions are of nickel, silver, tin, lead, palladium, cobalt, gold, platinum or bismuth or their alloys, preferably silver.

RECEIVED "9865007"